

Missouri Well Construction Rule Update 2019 MWWA Conference

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Red Tape Reduction (RTR) Summary

- Executive Order 17-03 issued by Governor to reduce regulatory burden and streamline regulations.
- 18 month initiative for the Department.
- Reviewed all 598 rules.
- Rescinded 154 rules and amended 222 rules.
- Developed three new rules to consolidate existing rule language found in multiple locations.

RTR Summary Continued

- A total of 24,105 restrictive terms such as shall, must, will, etc. identified in the rules, we removed 37% or 8,868.
- 26% reduction in total rules (154 of 598).
- 63% of rules were amended or rescinded (376 of 598).
- More than 300 comments were received during the initial comment period.
- Nearly 1,000 comments were received and addressed during the Order of Rulemaking process.

RTR for Missouri Well Construction Rules (MWCR)

Missouri Geological Survey

Missouri Well Construction:

Title 10, Division 23

Rules:	47
Rescissions:	19
Amendments:	28
Removal:	51% (497/975)

Red Tape Reduction for MWCR

- Beginning in 1985, Missouri Well Construction Rules were developed with significant involvement from well installation contractors and through the authority of the Well Installation Board.
- These rules became effective in 1987. The monitoring well and heat pump rules have been updated, however the water well rules have had few changes in the past 30 years.
- Prior to the RTR Initiative, the Well Installation Section was already working to update all rules to align with advances in technology and current drilling practices, remove unnecessary language, and improve the ease of use of the rules.

RTR for MWCR Continued

- 23 stakeholder comments provided to the Department were considered during the review and rule drafting process, and were incorporated when appropriate.
- Seven stakeholder meetings were held in February 2018 throughout the state.
- Approximately 62 stakeholders attended which included both restricted and non-restricted permit holders and other interested groups.
- The Red Tape Reduction review process has resulted in the removal of restrictive burdens. As a result, the rules are now better organized and user friendly.

RTR for MWCR Continued

- The Department has amended and added certain drilling and plugging specifications to the rules, which **eliminates** the burden on the industry **to obtain prior approval** from the Department.
- The proposed rule amendments will **decrease the amount of material** required to construct or plug wells in certain drilling areas, resulting in less cost and time to complete with no loss in groundwater protection.
- A public hearing on rule changes was held in Rolla on September 7, 2018.

RTR for MWCR Continued

- Orders of Rulemaking were approved by the Well Installation Board on November 2, 2018.
- Proposed rules were filed on November 2, 2018 with the Secretary of State.
- Rules will be published in the Missouri register and become effective on February 28, 2019.
- New rulemaking is approved as needed.

MWCR Chapter 1

Definitions, Variances and Permitting

Chapter 1—Definitions *[and Organizational Structure]*, *Variances, and Permitting Requirements*

- Reminder this is a summary!
- Please review the entire rule book for updates and changes.
- Rules that have been rescinded are either:
 - Incorporated into other rules,
 - Referenced in statute
 - Unnecessary or redundant language
- Definitions from all chapters have been moved to Chapter 1.
- New definitions have been added.

MWCR Chapter 1

Definitions, Variances and Permitting

- **10 CSR 23 1.010—Definitions** continued
- **Clean fill** means uncontaminated inert solid material such as pea gravel, sand, drill cuttings, and agricultural lime.
- **Completion date** means the date the work, subject to these rules, is complete as follows:
 1. For installation of water wells, the date the well has casing set and grouted and the well is drilled to total depth;
 2. For pump installation, the date the pump is set and pump or service truck leaves the site;

MWCR Chapter 1

Definitions, Variances and Permitting

Completion Date Definition Continued

3. For installation of heat pump systems, the date the last well in the well field has been drilled and grouted;
4. For installation of monitoring wells, the date when the well has the riser, screen, and surface completion is installed;
5. For plugging of temporary monitoring wells, the date the first well is plugged; or
6. For plugging of water, monitoring, heat pump, and test hole wells, the date the well is plugged.

MWCR Chapter 1

Definitions, Variances and Permitting

- **Geotechnical well or boring** means a monitoring well used to collect or evaluate subsurface data to determine the properties of geologic materials such as type, chemical composition, compressibility, strength, or structure. This does not include geotechnical borings for construction foundation data.
- **Inactive well** means a well not currently operational that is not in a state of disrepair and does not present a threat to groundwater.
- **Incomplete well** means a well that was abandoned during construction with or without casing and is susceptible to surface contamination.

MWCR Chapter 1

Definitions, Variances and Permitting

10 CSR 23-1.010—Definitions continued

- **Major water user** has the same meaning as defined in section 256.400, RSMo.
- **Primary contractor** means a person engaged for compensation in the business of the construction, alteration, major reconstruction, pump service, or plugging of any well or directs or supervises these activities. The primary contractor is equally responsible for the work performed by the installation contractor, including, but not limited to, the submittal of all forms and fees.

MWCR Chapter 1

Definitions, Variances and Permitting

10 CSR 23-1.010---Definitions continued

- **Reverse tremie grouting method** means the process in which a tremie pipe is set to within twenty feet (20') of the bottom of the well bore...This method primarily used for well plugging.
- **Service vehicle** means any rig, pump truck, or dedicated vehicle used to perform work that is regulated by 10 CSR 23.
- **Soil boring** means a monitoring well used to sample or test the soil strata to determine soil properties such as type, chemical composition, compressibility, strength, structure, or concentration of contaminants.

MWCR Chapter 1

Definitions, Variances and Permitting

- **State of disrepair** means a well that is unable to produce water to the ground surface or transport water to a point of use or poses a contamination risk to the groundwater. It does not mean a well that is waiting for pump installation or a well that has been approved by the department for temporary dormancy. See Inactive Well 10 CSR 23-1.010(9)(A).

10 CSR 23-1.040 [Modification by the Division] Variances.

- Variance requests submitted on a form provided by the department **at least forty-eight (48) hours prior** to any regulated work being performed.

MWCR Chapter 1

Definitions, Variances and Permitting

10 CSR 23-1.050 [Qualifications] *Permittee Qualifications, Testing Procedures, and Permit Application.*

- Adding permit types.

Current Missouri permit holders, may apply to add additional permit types by doing the following:

1. Complete apprenticeship program pursuant to 10 CSR 23-1.050(3) or submit proof of financial responsibility pursuant to 10 CSR 23-1.050(5) and complete one (1) year of prenotification pursuant to 10 CSR 23-1.050(6);

MWCR Chapter 1

Definitions, Variances and Permitting

2. Submit a complete permit testing application and corresponding fee;
3. Pass the applicable restricted (open book) and nonrestricted (closed book) permit test(s) with $\geq 70\%$;
4. Submit a complete permit application and the corresponding fee.

- Any well installation permit holder may add a pump installation permit without completion of 10 CSR 23-1.050(5)(A). (**without apprenticeship, bond, and prenotification**)
- Pump installation permit holders shall complete the apprentice program to add additional permit types.

MWCR Chapter 1

Definitions, Variances and Permitting

- Out of state contractors same requirements but may only apply for same type of permit they hold.

10 CSR 23-1.075 Disciplinary Action*[and Appeal Procedures]*. Cleanup language

10 CSR 23-1.090 Permits *[Requirement]*.

- General Permit Requirements.
 - Restricted permits are required for persons who contract or sub-contract work regulated by Missouri Well Construction Rules.
 - Restricted permits are required for persons to be a primary contractor and/or on-site drilling supervisor.

MWCR Chapter 1

Definitions, Variances and Permitting

10 CSR 23-1.105 Permit Renewal.

- For reinstatement less than one (<1) year from expiration date. Submit applicable permit application and fee. (**Former rule required to retest after 30 days**) >1 year have to test.

10 CSR 23-1.140 *[Placement of Permit Number]* **Vehicle and Machine Registration.** Language cleanup.

10 CSR 23-1.160 Mail and Notification Procedures. Language cleanup to add electronic mail.

MWCR Chapter 2

Fee Structure, Certification, and Registration

Chapter 2—*[Well Drillers and Pump Installers Permitting]* Fee Structure, Certification, and Registration

10 CSR 23-2.020 Certification and Registration (new rule)

- For certification and registration report requirements see section 256.614.1, RSMo.

MWCR Chapter 2

Fee Structure, Certification, and Registration

Certification reports

- If the pump is installed within sixty (60) days of the well completion date, the pump information may be included on the well certification report.
- If the pump is installed more than sixty (60) days after the well completion date or if a different permitted contractor installs the pump, then the pump installation contractor is responsible for submitting a separate pump report.
- In other words, **a well report may no longer be delayed past 60 days waiting for pump installation.**

MWCR Chapter 2

Fee Structure, Certification, and Registration

- A certification report is not needed for temporary monitoring wells, dry holes, or test holes. (Former rule required a certification record for dry hole)

Chapter 3—*Water Well Construction Code*

10 CSR 23-3.010 Location of Wells.

Feature requiring setback	Minimum horizontal distance	
Storage area for commercial fertilizers or chemicals	300'	
Demolition landfill	300'	
Wastewater treatment plant or lagoon that serves commercial facilities, subdivisions, or mobile home parks	300'	
Above ground or underground storage tank ^{1, 2}	300'	
Tank distribution lines for liquid petroleum, petroleum products, or chemicals ^{1, 2}	300'	
Earthen, concrete, or other manure storage structures or lagoons	300'	
Land application areas for domestic or animal waste	300'	
Animal composting facilities	300'	
Unplugged abandoned wells	100'	
Subsurface wastewater disposal field, grave, residential lagoon, privy, lift station, or pressurized sewer line	100'	
Animal Feeding Operation (AFO)⁴	100'	
An animal composting facility constructed with a concrete floor cell design covered with a roof	100'	
Dry litter storage within a building	100'	
Other areas with contaminants that may leach into the groundwater	100'	
Septic tank or wastewater holding tank	50'	
Pit or cistern	50'	
Existing operating well	50'	
Non-pressurized buried sewer line	25'	
Solid waste disposal area, sanitary landfill, special waste landfill, utility waste landfill, waste stabilization pond (lagoon), or hazardous waste treatment, storage, or disposal facility ³	1000'	

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.020 General Protection of Groundwater Quality and Resources.

- A person may not leave a well incomplete or a borehole open and shall plug or complete the well as directed by the department.
- Casing and/or drop pipe when being installed or replaced shall not come in direct contact with the ground surface.
- Water used in the drilling process or well development shall be of potable quality.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.020 General Protection of Groundwater Quality and Resources.

- Lubricants used during drilling must not adversely affect groundwater.
- Best management practices such as silt fences, straw bales, containment pits, or basins shall be used to contain drill cuttings, fluid, and foam resulting from drilling operations to minimize impact to land and prevent a discharge to waters of the state. If a discharge to a water of the state occurs, notify the department.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.030 Standards for Construction of *Water Wells*

(format of how the new rule book will look)

(1) Domestic Water Wells and Pilot Holes.

(A) Casing.

1. Steel well casing...
2. Plastic well casing...

(B) Borehole. For borehole size see 10 CSR 23-3.090.

(C) Grouting.

1. Grouting installation methods.
 - a. Gravity method.
 - b. Tremie method. etc.,.



MWCR Chapter 3

10 CSR 23-3.030 Standards for Construction of *Water Wells*

- Driving Casing
 1. When geologic conditions require the casing to be driven, the casing may be driven to the casing depth without adding grout.
 2. Once the casing is set, install liner pursuant to 10 CSR 23-3.080.
 3. In addition to the liner, a top annular casing seal, at least ten feet (10') deep is required below the pitless connection.
 4. A liner and top annular seal are not required when the open hole method or positive displacement grouting method is used.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.030 Standards for Construction of *Water Wells*

- Multifamily Wells
 1. Multifamily wells shall have no more than **eight (8)** connections, fewer than twenty-five (25) individuals, and have a pumping capacity of less than seventy gallons per minute (<70 gpm).
 2. Multifamily wells may be used to serve a charitable or benevolent organization pursuant to section 640.116, RSMo.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.030 Standards for Construction of *Water Wells*

- High yield unconsolidated wells two hundred feet (200') or more in depth, may use Schedule 80 plastic casing. (former rule steel casing high yield bedrock specs)
- High yield unconsolidated wells less than two hundred feet (<200') shall have a 10' top seal. (former rule, not for human consumption and grout top 4-5' within 60 days)

Note: All public wells must have plans and specs. Casing depth letter may be delayed.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.040 Well Casing Seals and Connections.

Rescinded and Incorporated into 23-3.050

10 CSR 23-3.050 Pump Installation *and Wellhead Completion*.

- A permitted pump installation contractor shall perform all electrical wiring that impacts the operation of the pump or pressure system to the point of entry. Any person may perform electrical wiring on high yield wells.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.050 Pump Installation *and Wellhead Completion.*

- Frost proof yard hydrants shall not be installed directly on the wellhead and be securely anchored.
- Double check valve back flow prevention device between well and contamiant source.
- Pump installer required to do all plumbing which impacts the distribution of water from the well, thru the pressure system to the point of entry.
- Temporary well cap is required after drilling.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.060 Certification and Registration Reports.

Rescinded and moved to Chapter 2.

10 CSR 23-3.070 Plastic Well Casing.

Rescinded and Moved to 23-3.030

10 CSR 23-3.080 Liners.

- To seal out undesirable conditions or to correct inadequate casing seals—
 1. Have a minimum annular space of one-half inch;
 2. Have a minimum of two (2) rubber packers secured below the bottom of the area of concern to be grouted;



MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.080 Liners

3. Have packers placed a max. of **ten feet (10')** apart;
4. Use one (1) of the following grout materials:
 - A. **Cement slurry**; or
 - B. **Coated bentonite pellets**; or
 - C. Other grout materials upon receiving approval;
5. Use one (1) of the following grout methods:
 - A. Gravity; or
 - B. Tremie;
6. Thirty foot (30') annular seal; (**former rule 60'**)
7. Packers set 25' below casing and grout 5' into casing.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas (Regionalization)

- **Drill Areas 1 thru 4 and 6** no significant changes.
- **Drill Area 5** exempts wells with casing <4 inches.
- **Drill Area 7 (formerly Sensitive Area A).**
Added Unconsolidated material wells.
- **Drill Area 8 (formerly Sensitive Area B).**
 1. Removed Lake Wappappello
 2. When steel casing is used and the minimum casing depth cannot be achieved due to geologic reasons, casing shall be installed to a minimum of eighty feet (80') extending a minimum of thirty feet

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 8 (Sensitive Area B)

(30') into bedrock and a liner used to achieve the remaining casing depth provided the following requirements are met:

- Normal liner install as stated in 10 CSR 23-3.080 except:
- Have a minimum of **two (2) three (3)-ribbed rubber packers (K-packers)** secured at or below the bottom of the minimum casing depth;
- Cement slurry or coated pellets;

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 9 (Sensitive Area C)

- The casing shall be installed a minimum of ten feet (10') below the Ozark Confining Unit (**no need to call for a variance but needs to be clearly indicated on the well report**) or as indicated in the casing depth map for Greene and Northern Christian Counties. When steel casing is used..., casing shall be installed to a minimum of (100') extending a minimum of (30') into bedrock and a liner used to achieve the casing point provided the following is met:

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 9 (formerly Sensitive Area C)

- Normal liner install as stated in 10 CSR 23-3.080 except:
- Have a minimum of **two (2) three (3)-ribbed rubber packers (K-packers)** secured at or below the bottom of the Ozark Confining Unit...
- Cement slurry or coated pellets;

10 CSR 23-3.090 Drill Areas Area 10 (formerly Special Area 1)

No rule changes

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 11 (formerly Special Area 2)

Bedrock Wells.

- Wells drilled outside of Impact Areas may be installed in the upper aquifer provided they do not penetrate the Ozark Confining Unit; or wells may be installed and cased/sealed through the Ozark Confining Unit and open to only the lower aquifer.
- **Aquifer mixing is no longer allowed.**

New lower aquifer wells outside of Impact Areas.

- The casing shall be installed a minimum of (10') below the Ozark Confining Unit or to the lower depth indicated on the casing depth map.

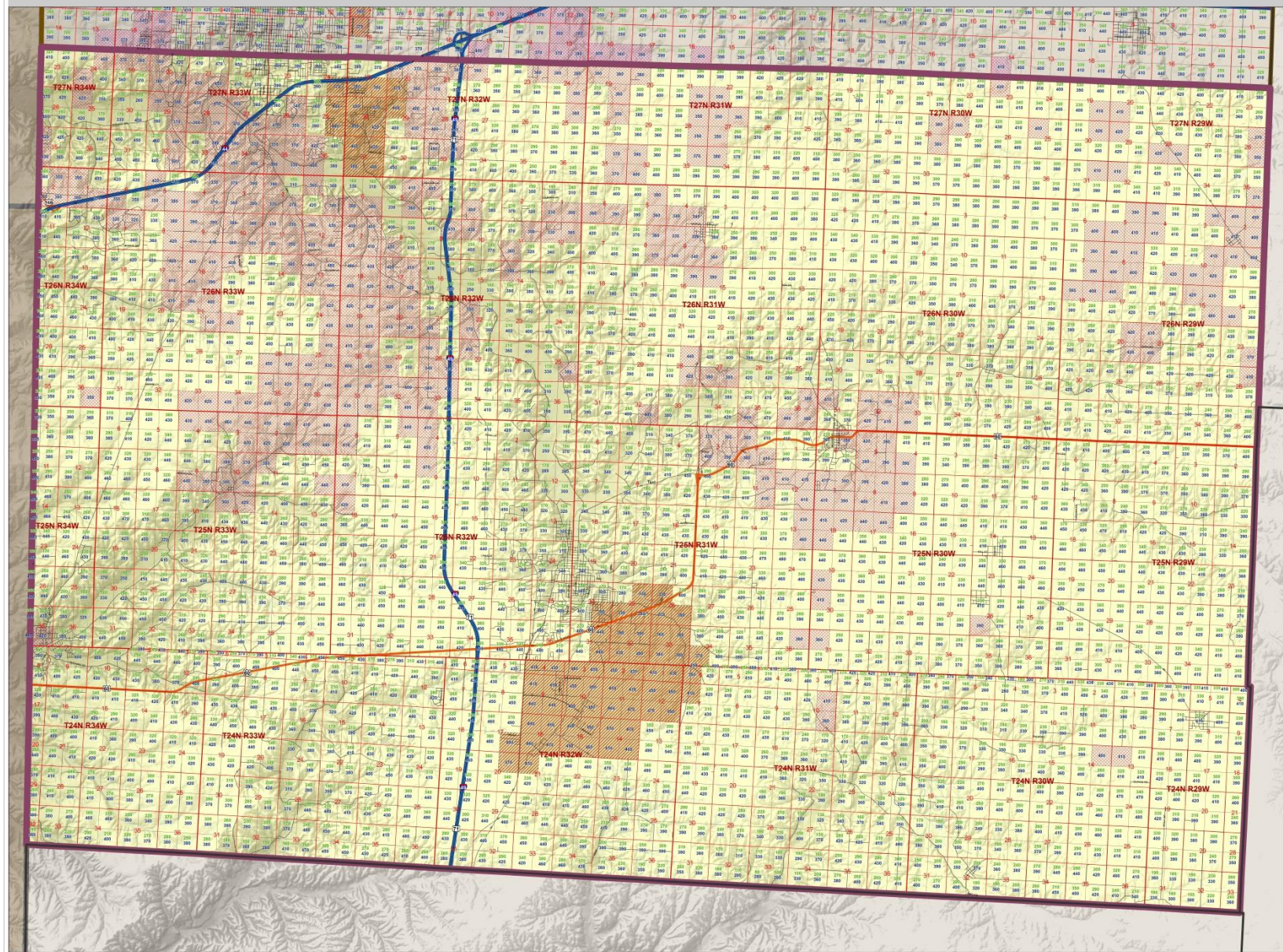
Area 11 - Newton County

Impact Areas, Casing Depths, and Maximum Well Depths

Effective February 28, 2019



MISSOURI DEPARTMENT OF NATURAL RESOURCES
MISSOURI GEOLOGICAL SURVEY
GEOLOGICAL SURVEY PROGRAM
WELL INSTALLATION SECTION
PO BOX 250, ROLLA, MO 65402
673-368-2100
www.dnr.mo.gov/geology/geosrv/wellhd/wellsanddrilling.htm



HOW TO USE THIS MAP

1. Locate the proposed well on the map.
2. If the proposed well is not located in an impact area, please follow Minimum Casing Depth, and Maximum Well Depth guidelines for the 14-section.
3. If the proposed well is located in an impact area, please follow the Maximum Well Depth for upper aquifer wells.
4. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
5. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
6. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
7. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
8. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
9. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.
10. If the proposed well is located in an impact area, please follow the Maximum Well Depth for lower aquifer wells.

NOTE: Upper aquifer wells are prohibited within impact areas.



Legend

- Township and Range
- Section and Section Number
- Quarter Section
- Lead and Cadmium Impact Area
- TCE Impact Area
- Maximum Well Depth For Upper Aquifer Wells
- Minimum Casing Depth For Lower Aquifer Wells

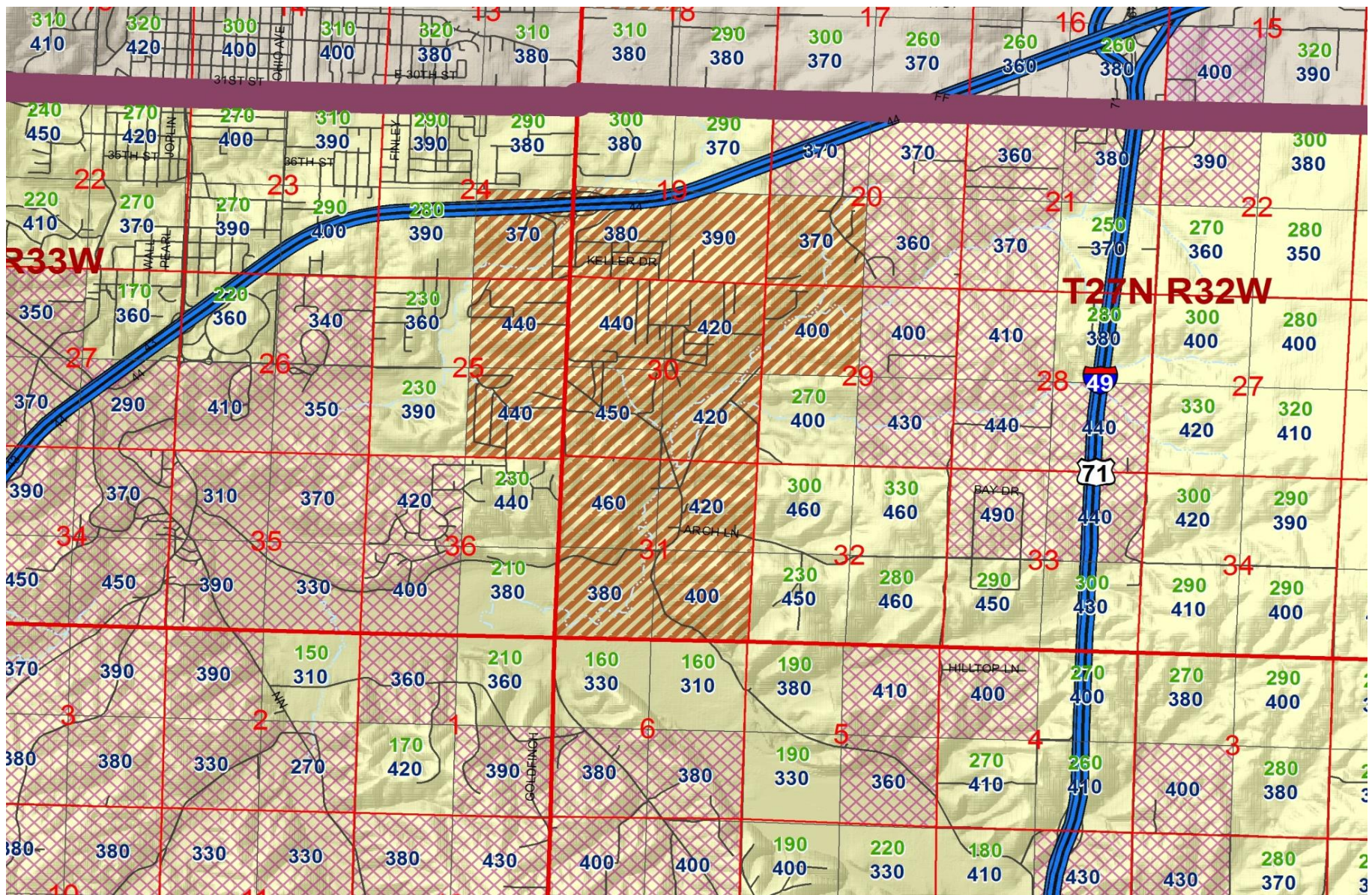
WARNING
The impact areas of this map were delineated on the basis of known contaminated wells. New wells drilled into the upper aquifer may not be in the impact areas, but they may be in the impact areas. Contamination could exist in other areas of the county, especially in former mined areas and in areas where there is or was groundwater quality data. Contamination does move over time, so the impact areas can change. The impact areas represent groundwater conditions derived from EPA and M&DNR analytical data.

NOTE
Contributor from all wells drilled after Jan. 1, 2002 must be sampled and analyzed for lead, cadmium, and trichloroethylene (TCE) in impact areas.



0 0.75 1.5 3 Miles

Disclaimer: Although this map has been compiled by the Missouri Department of Natural Resources, no warranty, expressed or implied, is made by the department as to the accuracy of the data and related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the department in the use of these or related materials.



MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 11 (formerly Special Area 2)

Sampling

- **Pump installers and owners** who self-install pumps are **responsible for sampling** according to laboratory protocol and submitting sample results within sixty (60) days of pump installation.
- All upper aquifer wells drilled outside impact areas shall be constructed with a sampling port or tap within **twenty feet (20')** of the wellhead.
- **Lower aquifer wells no longer required to sample.**

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 11 (formerly Special Area 2)

- When steel casing is used and the minimum casing depth cannot be achieved due to geologic reasons, casing shall be set...(80') extending (30') into bedrock and a liner used to...the casing depth provided the following are met:
- Normal liner install as stated in 10 CSR 23-3.080 except:
- Have a minimum of **two (2) three (3)-ribbed rubber packers (K-packers)** secured at or below the bottom of the Ozark Confining Unit;
- Cement or coated pellets;

Note: Dye tracing study will be conducted by department staff.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.090 Drill Areas Area 11 (formerly Special Area 2)

- Major reconstruction (**deepening**) of wells in Area 11 that involves exceeding the upper depth indicated in the casing depth map or penetrating the Ozark Confining Unit requires advanced written approval from the department.

10 CSR 23-3.090 Drill Areas Area 12 (formerly Special Area 3 New Haven) No rule changes

10 CSR 23-3.090 Drill Areas Area 13 (formerly Special Area 4 Weldon Springs) Added two new chemicals for testing

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.110 Plugging of *Water Wells*

- A dry hole **shall be plugged within thirty (30) days** and a plugging registration record submitted. A certification record is not required.
- Wells that produce saline water **shall be plugged within thirty (30) days** and a plugging registration record submitted. A certification record is not required.
- If the well casing is surrounded by a concrete pad or asphalt, the casing may be cut off flush.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.110 Plugging of *Water Wells*

- Wells that have greater than >100' of standing water may have bentonite chips or pellets poured from ground surface using the **gravity method**.
- Wells that have a foreign object, contamination, liner or pump stuck may be plugged full length with cement slurry **without calling** for a variance.
- High yield bedrock wells may be plugged with cement slurry by tremie or reverse tremie method **without calling** for plugging specifications.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.110 Plugging of *Water* Wells

Unconsolidated material wells.

- Wells less than or equal to $\leq 200'$ total depth, add clean fill from total depth to approximately 20' below ground surface. **Grout top 20'.**
- Wells greater than $>200'$ total depth, add clean fill from total depth to approx. 50' below ground surface. **Grout top 50'.**
- If the well casing and screen are removed from the well, native material is allowed to collapse into the borehole.

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.110 Plugging of *Water Wells*

Inactive Water Wells

- May remain unplugged for a period **no longer than five (5) years** from the date the well became inactive provided the well owner obtains written approval from the department.
- **Certified wells.**
- Upon approval of inactive water well status, the pump must be removed and the wellhead provided with a permanent steel plate welded or a PVC cap glued. At the end of the five (5) year period, the well is considered abandoned and shall be plugged...

MWCR Chapter 3

Water Well Construction Code

10 CSR 23-3.110 Plugging of *Water Wells*

Noncertified wells.

- Prior to approval of inactive water well status, the following shall be completed:
 1. The well owner or permitted pump installation contractor shall remove the pump;
 2. Allow the department to inspect the well by use of a downhole camera;
 3. Protect the wellhead by a permanent steel plate welded or a PVC cap glued; and
 4. The well casing length shall meet the construction requirement for the drill area.

MWCR Chapter 3

Water Well Construction Code

- The department will deny the request for inactive status if any of the requirements listed under 10 CSR 23-3.110(4)(B) are not met, the well does not meet minimum construction standards, or the well is found to be in a state of disrepair.
 1. The well owner may reconstruct the well to meet minimum construction standards.
 2. The well owner may reapply for inactive well status for up to five years.
 3. If the well is not operational at the end of the five (5) year period, the well is considered abandoned and shall be plugged.

MWCR Chapter 4

Monitoring Well Construction Code

10CSR 23-4.060—Monitoring Well Construction Code

- Monitoring wells shall be constructed so that aquifer mixing does not occur and **may not be screened through the soil-bedrock horizon** unless advanced written approval is obtained from the department.
- Drilling water shall be of potable quality.
- Protective posts are required for above-ground completed monitoring wells in traffic areas.

MWCR Chapter 4

Monitoring Well Construction Code

10 CSR 23-4.080 Plugging of Monitoring Wells.

- Cut off riser pipe and/or casing two feet (2') below ground surface; (**riser and screen may be left in place**)
- Flush mount completions in paved areas may be left in place and filled with asphalt or concrete;
- A nonrestricted monitoring well installation contractor must be on site at all times during the excavation and plugging operations.
- Reports for plugging of temporary monitoring wells shall be submitted within **180 days of the first well plugged.**

MWCR Chapter 5

Heat Pump Construction Code

10 CSR 23-5.050—Standards for Closed-Loop Heat Pump Wells

- Jetted Heat Pump Wells. Removed depth restriction of 75' for Drilling Area 5.

10 CSR 23-5.060 Construction Standards for Open-Loop Heat Pump Systems

- Supply and return wells shall be constructed to domestic/**multifamily (added)** well standards pursuant to 10 CSR 23-3.030(1) if it produces less than seventy (70) gallons per minute...

MWCR Chapter 6

Test Hole Construction Code

10 CSR 23-6.050--Plugging of Test Holes

Plugging methods have been made the same for:

- Test holes with no surface casing;
- Test holes with removable surface casing pipe;
- Test holes with grouted nonremovable surface casing;

Test holes drilled to expand quarrying and surface mining operations.

- Test holes completely destroyed within one (1) year of the advance of the mine or quarry shall have a **ten foot (10')** surface grout plug and are exempt from plugging registration requirements.
- Clay mining operations. Test holes that do not penetrate beneath an impermeable fire clay deposit shall have a **ten foot (10')** surface grout plug and are exempt from plugging registration requirements.



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

Thank You